

ABSTRACT OF THE DISCLOSURE

The present invention provides methods and systems for fast purging of pellicle volumes. A purge device has a base which is enclosed in a controlled environment filled with purge gas. The base has a cavity formed on a surface therein. The cavity receives a reticle-pellicle assembly including a pellicle surface and an enclosed pellicle volume. A first region within the cavity can be formed to hold purging gas at a high pressure. A gap region is formed below the pellicle within the cavity. A displacement force on the pellicle due to a pressure difference between purging gas in the enclosed volume and purging gas in the gap region is kept within a tolerance range of the pellicle. According to further embodiments, a purge device is provided that includes a flow barrier (e.g., non-contacting and/or contacting barriers). A pressure balancing plate and/or flow resistant plates are provided in a purge device.